

Atty Dkt. No.: CLON-028
USSN: 09/976,673

AMENDMENTS

In the claims:

1. (Currently Amended) A nucleic acid present in other than its natural environment, wherein said nucleic acid encodes **an a far red shifted** Stichodactylidaen chromoprotein or fluorescent mutant thereof
2. (Original) The nucleic acid according to Claim 1, wherein said nucleic acid is isolated.
3. (Currently Amended) A nucleic acid present in other than its natural environment, wherein said nucleic acid encodes **a** fluorescent protein having an emission maximum ranging from about **580 to 660 620 to 680** nm.
4. (Original) The nucleic acid according to Claim 3, wherein said nucleic acid is isolated.
5. (Currently Amended) A nucleic acid **present in other than its natural environment** having a sequence of residues that is **similarity of at least about 80%** **with** substantially the same as or identical to a nucleotide sequence of at least 10 residues in length of ~~SEQ ID NOS:01-14~~ **chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27.**
6. (Currently Amended) The nucleic acid according to Claim 5, wherein said ~~nucleic acid has a~~ sequence similarity ~~is of~~ at least about **90% 60%** ~~with a sequence of at least 10 residues in length selected from the group of sequences consisting of SEQ ID NOS: 01-14.~~
7. (Currently Amended) A fragment of the nucleic acid selected from the group consisting of:
 - (a) a nucleic acid that encodes **an a far red shifted** Stichodactylidaen

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chromoprotein or fluorescent mutant thereof;

(b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about ~~580 to 660~~ 620 to 680 nm; and

(c) a nucleic acid having a sequence of similarity of at least about 80% with ~~substantially the same as or identical to~~ a nucleotide sequence of ~~at least 10 residues in~~ length of ~~SEQ ID NOS: 01-14~~ chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27;

wherein said fragment encodes a fluorescent product and is present in other than its natural environment.

8. (Currently Amended) An isolated nucleic acid or mimetic thereof that hybridizes under stringent conditions to a nucleic acid selected from the group consisting of:

(a) a nucleic acid that encodes ~~an~~ a far red shifted Stichodactylidaen chromoprotein or fluorescent mutant thereof;

(b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about ~~580 to 660~~ 620 to 680 nm; and

(c) a nucleic acid having a sequence of similarity of at least about 80% with ~~substantially the same as or identical to~~ a nucleotide sequence of ~~at least 10 residues in~~ length of ~~SEQ ID NOS: 01-14~~ chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27;;

or its complementary sequence.

9. (Currently Amended) A construct comprising a vector and a nucleic acid selected from the group consisting of:

(a) a nucleic acid that encodes ~~an~~ a far red shifted Stichodactylidaen chromoprotein or fluorescent mutant thereof;

(b) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about ~~580 to 660~~ 620 to 680 nm; and

(c) a nucleic acid having a sequence of similarity of at least about 80% with ~~substantially the same as or identical to~~ a nucleotide sequence of ~~at least 10 residues in~~

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length of SEQ ID NOS: 01-14 chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27;

~~(d) a fragment of the above nucleic acids; and~~

~~(e) a nucleic acid or the complement thereof that hybridizes under stringent conditions to the above nucleic acids.~~

10. (Currently Amended) An expression cassette comprising:

(a) a transcriptional initiation region functional in an expression host;

(b) a nucleic acid selected from the group consisting of the nucleic acids of:

(i) a nucleic acid that encodes a far red shifted Stichodactylidaen chromoprotein or fluorescent mutant thereof;

(ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and

(iii) a nucleic acid having a sequence of similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27~~Claims 4 to 9;~~ and

(c) and a transcriptional termination region functional in said expression host.

11. (Original) A cell, or the progeny thereof, comprising an expression cassette according to Claim 10 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.

12. (Original) A method of producing an Anthozoan chromo and/or fluorescent protein, said method comprising:

growing a cell according to Claim 11, whereby said protein is expressed; and
isolating said protein substantially free of other proteins.

13. (Withdrawn) A protein or fragment thereof encoded by a nucleic acid selected from the group consisting of Claims 1 to 9.

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14. (Withdrawn) An antibody binding specifically to a protein according to Claim 13.
15. (Withdrawn) A transgenic cell or the progeny thereof comprising a transgene selected from the group consisting of a nucleic acids according to any of Claims 1 to 9.
16. (Withdrawn) A transgenic organism comprising a transgene selected from the group consisting of a nucleic acids according to any of Claims 1 to 9.
17. (Withdrawn) In an application that employs a chromo- or fluorescent protein, the improvement comprising:
employing a protein according to Claim 13.
18. (Currently Amended) In an application that employs a nucleic acid encoding a chromo- or fluorescent protein, the improvement comprising:
employing a nucleic acid selected from the group consisting of:
(i) a nucleic acid that encodes a far red shifted Stichodactylidaen chromoprotein or fluorescent mutant thereof;
(ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and
(iii) a nucleic acid having a sequence of similarity of at least about 80% with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13, 15, 17, 19, 23, 25 and 27-according to Claims 1 to 9.
19. (Currently Amended) A kit comprising:
a nucleic acid selected from the group consisting of:
(i) a nucleic acid that encodes a far red shifted Stichodactylidaen chromoprotein or fluorescent mutant thereof;
(ii) a nucleic acid that encodes fluorescent protein having an emission maximum ranging from about 620 to 680 nm; and

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(iii) a nucleic acid having a sequence of similarity of at least about 80%
with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13,
15, 17, 19, 23, 25 and 27 according to Claims 1 to 9; and
instructions for using said nucleic acid.

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**(iii) a nucleic acid having a sequence of similarity of at least about 80%
with a nucleotide sequence chosen from SEQ ID NOS: 01, 03, 05, 07, 09, 11, 13,
15, 17, 19, 23, 25 and 27 according to Claims 1 to 9; and
instructions for using said nucleic acid.**